

## CLAIMS

- 1        1. An optical subassembly for an optoelectronic module, comprising:  
2        a lens;  
3        an optoelectronic device;  
4        an adhesive interface positioned between and in physical contact with the lens and the  
5        optoelectronic device.
- 1        2. The optical subassembly as recited in claim 1, wherein optoelectronic device includes a  
2        laser.
- 1        3. The optical subassembly as recited in claim 1, wherein optoelectronic device includes a  
2        photoelectric receiver chip.
- 1        4. The optical subassembly as recited in claim 1, wherein the lens has a surface the shape  
2        of which is selected based on a refractive index of the adhesive interface.
- 1        5. The optical subassembly as recited in claim 1, wherein the lens is integrally formed with  
2        a housing member of the optical subassembly, and wherein the adhesive interface is in physical  
3        contact with at least a portion of the housing member that does not comprise the lens.
- 1        6. The optical subassembly as recited in claim 5, wherein at least a portion of the housing  
2        member and the lens is formed from polyetherimide.
- 1        7. The optical subassembly as recited in claim 1, wherein the adhesive interface has a  
2        predetermined optical transmittance at the operating wavelength of the optoelectronic device.
- 1        8. The optical subassembly as recited in claim 7, wherein the operating wavelength of the  
2        optoelectronic device is about 850nm.

1           9. The optical subassembly as recited in claim 1, wherein the adhesive interface is formed  
2 by curing an adhesive material selected from the group consisting of acrylic adhesives, urethane-  
3 acrylate adhesives, epoxy adhesives, and mixtures thereof.

1           10. The optical subassembly as recited in claim 9, wherein the adhesive material is a  
2 urethane-acrylate adhesive that includes a polyurethane oligomer.

1           11. An optoelectronic module, comprising:  
2 a housing;  
3 an electronic circuit board mounted within the housing;  
4 at least one optical subassembly connected to the electronic circuit board, the at least one  
5 optical subassembly comprising:  
6           a lens;  
7           an optoelectronic device;  
8           an adhesive interface positioned between and in physical contact with the lens and  
9 the optoelectronic device.

1           12. The optoelectronic module as recited in claim 11, wherein the at least one optical  
2 subassembly includes a transmitter optical subassembly the optoelectronic device of which  
3 includes a laser, and wherein the at least one optical subassembly includes a receiver optical  
4 subassembly the optoelectronic device of which includes a photoelectric receiver chip.

1           13. The optoelectronic module as recited in claim 11, wherein the lens has a surface the  
2 shape of which is selected based on a refractive index of the adhesive interface.

1 14. The optoelectronic module as recited in claim 11, wherein the lens is integrally formed  
2 with a housing member of the optical subassembly, and wherein the adhesive interface is in  
3 physical contact with at least a portion of the housing member that does not comprise the lens.

1 15. A method of making an optical subassembly for an optoelectronic module, comprising  
2 the steps of:  
3 applying an adhesive to a lens;  
4 applying an adhesive to an optoelectronic device;  
5 joining the lens having the adhesive applied thereto and the optoelectronic device having  
6 the adhesive applied thereto;  
7 curing the joined adhesive to form an adhesive interface positioned between and in  
8 physical contact with the lens and the optoelectronic device.

9 16. The method as recited in claim 15, wherein optoelectronic device includes a laser.

10 17. The method as recited in claim 15, wherein optoelectronic device includes a  
11 photoelectric receiver chip.

12 18. The method as recited in claim 15, wherein the lens is integrally formed with a housing  
13 member of the optical subassembly, and wherein the step of applying the adhesive to the lens  
14 further comprises applying the adhesive to a portion of the housing member that does not  
15 comprise the lens, whereby the adhesive interface is formed in physical contact with at least the  
16 portion of the housing member that does not comprise the lens.

17 19. The method as recited in claim 15, wherein the adhesive includes an adhesive material  
18 selected from the group consisting of acrylic adhesives, urethane-acrylate adhesives, epoxy  
19 adhesives, silicone-based adhesives, and mixtures thereof.

1           20. The method as recited in claim 18, wherein the curing step includes the step of  
2 exposing the joined adhesive to UV radiation through the housing member.

1           21. The method as recited in claim 15, wherein the curing step includes the step of heating  
2 the joined adhesive.